

**BY ORDER OF THE COMMANDER
AIR FORCE MATERIEL COMMAND**



AIR FORCE INSTRUCTION 21-103

**AIR FORCE MATERIEL COMMAND
Supplement**

ADDENDUM_C

13 SEPTEMBER 2016

Maintenance

**EQUIPMENT INVENTORY, STATUS
AND UTILIZATION REPORTING
SYSTEM/F-15E MINIMUM ESSENTIAL
SUBSYSTEM LIST (MESL)**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements AFI 21-103_AFMCSUP, *Equipment Inventory, Status and Utilization Reporting*. It establishes guidance and assigns responsibility to provide AFMC Test Fleet aircraft status changes/updates in accordance with (IAW) current maintenance conditions and the developed MDS specific mission essential subsystem list (MESL). This instruction applies to all AFMC organizations that manage or perform maintenance on AFMC owned/possessed aircraft regardless of Air Force Specialty Code. Ensure that all records created as a result of processes prescribed in this publication are maintained IAW Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). This publication may be supplemented at any level, but all direct Supplements must be routed to the Office of Primary Responsibility (OPR) of this publication for coordination prior to certification and approval. The authorities to waive wing/unit level requirements in this publication are identified with a Tier ("T-0, T-2, T-3") number following the compliance statement. See AFI 33-360, Publications and Forms Management, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier

waiver approval authority, or alternately, to the Publication OPR for non-tiered compliance items. Send comments and suggested improvements to this instruction on AF Form 847, **Recommendation for Change of Publication**, to HQ AFMC/A4MM, 462 Chidlaw Road, Wright-Patterson AFB OH 45433-5006.

These MESLs complement AFI 21-103, *Equipment Inventory, Status, and Utilization Reporting*. They apply to maintenance activities supporting AFMC test missions across AFMC.

SUMMARY OF CHANGES

This publication has been substantially revised to meet the intent of AFI 21-103 AFMCSUP; this Addendum must be reviewed in its entirety. The MESL is modified based on user inputs and has been updated to reflect current mission requirements. Additionally, removed Tier 1 (T-1) IAW AFI 33-360 dated 1 December 2015, MAJCOM level instruction will not Tier references above the MAJCOM waiver authority (e.g. Table 1.1. Tier Waiver Authorities, Tier T-1 may be used in publications at Departmental level only.).

1.1. General. The MESL is the basis of status reporting IAW 21-103. MESLs lay the ground work for reporting the status of assigned/possessed AFMC test fleet aircraft and equipment supporting AFMC test missions. They list the minimum essential systems and subsystems that must work on test fleet aircraft to perform specifically assigned unit test, training, or other missions.

1.2. Qualifying notes are used to: Define system exceptions and help explain complex degraded mission systems.

1.3. It is understood that any aircraft or support equipment system or subsystem may: Be subjected to test or tested under a test scenario and/or are test dependent as directed by the test mission director. If identified by test mission director, those systems or subsystems, if not already identified by qualifying notes, must be operational to be considered FMC or PMC for that mission.

2.1. Reading the MESL. A MESL is read by comparing the systems stated by WUC column (column 2) against the Full Systems List (FSL) and all applicable Basic Systems List (BSLs) across the page (DTE - Developmental Test and Evaluation, DTS - Developmental Test Support, BFT/NT/TT - Training). Each unit's Design Operational Capability (DOC) statement determines applicability of BSL columns. The aircraft or equipment MESLs incorporate all AFMC assigned/possessed aircraft/equipment and therefore it is important to compare only the columns listed in the MESL which are applicable to the units assigned/possessed aircraft. For example, units with training (TF) coded aircraft would determine report status using only the FSL and TNG columns. Units with multiple coded aircraft will ensure status is reported using the MESL columns appropriate to the individual aircraft/equipment assignment code or type mission being flown. (T-2)

Table 2.1. F-15E Minimum Essential Subsystem Listing MESL.

NO.	WUC	SYSTEM/SUBSYSTEM	FSL	BSL		
				DTE (see note 1)	DTS (see note 1)	BFT/NT/ TT
1.	11000	Airframe	X	X	X	X
2.	12000	Cockpit and Fuselage Compartments	X	X	X	X
3.	13000	Landing Gear	X	X	X	X
4.	14000	Flight Controls	X	X	X	X
5.	23000	Turbofan Power Plant	X	X	X	X
6.	24000	Auxiliary Power Plant	X	X	X	X
7.	41000	Air Conditioning/Pressurization	X	X1	X1	X1
8.	42000	Electrical Power Supplement	X	X	X	X
9.	44A00	Exterior Lighting	X2	X2	X2	X2
10.	44B00/ E	Interior Lighting/Caution Light Panel Assembly	X	X	X	X
11.	45000	Hydraulic and Pneumatic Power Supply Systems	X	X	X	X
12.	46000	Fuel System	X	X	X	X
13.	47000	Oxygen System	X	X	X	X
14.	49000	Miscellaneous Utilities	X	X	X	X
15.	51000	Instruments	X	X	X	X
16.	52000	Autopilot	X			X
17.	52B00	Automatic Flight Control (Augmentation) Set	X	X	X	X
18.	55C000	Malfunction Analysis and Recording	X	X	X	X
19.	55E000	Built-In-Test Display Group	X	X	X	X
20.	55D000	Standard Flight Data Recorder	X11	X		
21.	57000	Integrated Guidance and Flight Control System	X	X	X	X
22.	63AX	UHF/VHF Communications	X3,4	X3,4	X3,4	X3,4
23.	63AV	UHF Communications	X3	X3	X3	X3
24.	63AZ	SATCOM Communications	X3,5	X3,5	X3,5	X3,5
25.	63B00	Integrated CNI Control Set	X	X	X	X
26.	63C00	Intercommunication System	X	X	X	X
27.	65F	IFF Interrogator	X	X	X	X
28.	65G	IFF Transponder	X	X	X	X
30.	71C00	Instrument Landing System	X	X	X	X
32.	71G00	Global Positioning System (EGI)	X	X	X	X
33.	71M00	Inertial Navigation System (RLG)	X	X	X	X
34.	71Q00	Fighter Data Link	X	X	X	X
35.	71Z00	Tactical Air Navigation Set	X	X	X	X
36.	72A00	CARA AN/APN-232	X	X	X	X

37.	74G/Q	Radar Set - AN/APG-70/82	X	X	X	X
38.	74K00	HUD Set	X	X	X	X
39.	74L/Z	Video Recorder System	X	X	X	X
40.	74M00	Multipurpose Display System	X6	X6	X6	X6
41.	74N00	LANTIRN Targeting Set	X8	X13,14	X13,14	X13,14
42.	74P00	LANTIRN Navigation Set	X8	X13,14	X13,14	X13,14
43.	74R/V	Data Link Pod Capable	X9	X13,14	X13,14	X13,14
44.	74T00	Joint Helmet Mounted Cueing System	X13	X13,14	X13,14	
45.	75000	Weapons Delivery	X10	X10	X10	X10
46.	75H00	Gun System	X	X13,14	X13,14	
47.	76A00/ B	Radar Warning Receiver	X	X	X	X
48.	76C00	Interface Blanker	X	X	X	X
49.	76G00	Electronic Warfare Warning Set (ALQ-128) (Decommisioned)	X	X	X	
50.	76H00/ L/M	ALQ-135 Band 1.5 and 3 (Decommisioned)	X	X12	X12	X12
52.	76K00	Countermeasures Dispenser	X7	X7	X7	X7
54.	82B00	Digital Mapping System	X	X	X	X
55.	91000	Emergency Equipment	X	X	X	X
55.	97000	Explosive Devices	X	X	X	X
56.		Instrumentation Sys {ATIS/(Mini-)AATIS}/m-CAIS	X13	X13,14	X13,14	X13,14
57.		Analog Data Recorder/High Speed Radar Solid State Recorders	X13	X13,14	X13,14	X13,14
58.		Digital Data Recorder (MARS 2/2E)/Solid State Data, Audio, & Video Recorders	X13	X13,14	X13,14	X13,14
59.		Telemetry System	X13	X13,14	X13,14	X13,14
60.		IRIG Time	X13	X13,14	X13,14	X13
61.		Flight Test Video	X13	X13,14	X13,14	X13
62.		TSPI (ARDS, GAINR)	X13	X13,14	X13,14	X13

Table 2.2. Qualifying Notes.

1.	Manual mode only required for PMC.
2.	As required by AFI 11-202, Volume 3, <i>General Flight Rules</i> .
3.	Two radios required, one radio must be Have Quick and Secure voice capable to be FMC. HAVE QUICK/Secure Voice required if deemed necessary for test objectives. See Note 12.
4.	After TCTO 1F-15-1500.
5.	After TCTO 1F-15E-825 when RT-1851A(C) assigned to aircraft.
6.	Seven (7) Multi-Purpose Displays (3 MPD/FPCD and 4 MPD) are required.
7.	If needed for Test purposes.
8.	Aircraft systems must be capable of LANTIRN operation to be FMC regardless of pod installation.
9.	Aircraft must be Data Link Pod capable for FMC regardless.
10.	Eight (8) missile and fifteen (15) air-to-ground station capability is required for FMC.
11.	If SFDR installed.
12.	Band 1.5 WUC 76N if installed.
13.	If installed.
14.	Test dependent. As determined by test director based on mission objectives.

DONALD E. KIRKLAND, Brigadier General, USAF
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 Protection

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 11-202, Volume 3, *General Flight Rules*, 7 Nov 2014

AFI 11-218, *Aircraft Operations and Movement on the Ground*, 28 Oct 2011

AFI 21-101, *Aircraft and Equipment Maintenance Management*, 21 May 2015

AFI 21-103, *Equipment Inventory, Status and Utilization Reporting*, 26 Jan 2012

AFI 33-360, *Publications and Forms Management*, 1 Dec 2015

AFMAN 33-363, *Management of Records*, 1 Mar 2008

AFPD 21-1, *Air and Space Maintenance*, 29 Oct 2015

Prescribed Forms

There are no prescribed forms for this publication

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*, 22 Sep 2009

Abbreviations and Acronyms

AFMC—Air Force Materiel Command

BSL—Basic Systems List

CARA—Combined Altitude Radar Altimeter

CFT—Conformal Fuel Tank

CNI—Communication Navigation Identification

DOC—Design Operational Capability

DTE—Developmental Test and Evaluation

DTS—Developmental Test Support

ECM—Electronic Counter Measures

EGI—Embedded GPS/INS

FSL—Full Systems List

GPS—Global Positioning System

HUD—Heads-Up Display

IAW—In Accordance With

IMT—Information Management Tool

IFF—Identification Friend or Foe

INS—Inertial Navigation System

JHMCS—Joint Helmet Mounted Cueing System

LANTIRN—Low-Altitude Navigation and Targeting Infrared for Night

MDS—Mission Design Series

MESL—Minimum Essential Subsystem List

MPCD—Multi-Purpose Color Display

OPR—Office of Primary Responsibility

PMC—Partial Mission Capable

RLG—Inertial Navigation System

SATCOM—Satellite Communications

TCTO—Time Compliance Technical order

TNG—Training

UHF—Ultra High Frequency

VHF—Very High Frequency

VSD—Vertical Situation Display

WUC—Work Unit Code